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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/007,134

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Catherine M. Payne

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07/15/2003

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EXAMINER

MALDONADO, JULIO J

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 07/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/007,134	Applicant(s) PEYNE ET AL.	
	Examiner Julio J. Maldonado	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 32-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 32-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. Claims 10-23 are newly added.
2. Claims 1-23 are pending in this application.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 10-23 been renumbered 32-45.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwata et al. (U.S. 5,846,695).

In reference to claims 1-4 and 32-34, Iwata et al. teach a composition for removal of etch residues from a semiconductor integrated circuit surface using copper materials

which comprises from about 10 percent by weight to about 50 percent by weight of choline compound, about 10 percent by weight to about 80 percent by weight of water and 20 percent to about 80 percent of an organic solvent (column 1, line 38 – column 4, line 25).

In reference to claims 5, 6, 8, 35, 36 and 38, Iwata et al. teach that the choline compound comprises choline hydroxide; and that the composition further includes hydroxylamine (column 1, line 38 – column 4, line 25).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7, 9, 37 and 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al. ('695) in view of Honda et al. (U.S. 5,798,323).

In reference to claims 7, 9, 37, 39-42, 44 and 45, Iwata et al. teach a composition for removal of etch residues from a semiconductor integrated circuit surface using copper materials which comprises from about 10 percent by weight to about 50 percent by weight of choline compound, about 10 percent by weight to about 80 percent by weight of water and 20 percent to about 80 percent of an organic solvent (column 1, line 38 – column 4, line 25).

Iwata et al. fail to teach that the organic solvent comprises 10 percent to about 50 percent by weight propylene glycol, dimethyl sulfoxide, monoethanolamine or

diglycolamine; and that the composition further comprises 0.5 percent to 5 percent by weight of a corrosion inhibitor. However, Honda et al. teach a cleaning composition for removal of etch residues in a semiconductor integrated circuit surface including an organic solvent comprising 10 percent to about 50 percent by weight of any of propylene glycol, dimethyl sulfoxide, monoethanolamine or diglycolamine; and that the composition further comprises 0.2 to about 3.8 percent by weight of a corrosion inhibitor (column 5, lines 24-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the organic solvents as taught by Honda et al. in the composition of Iwata et al., since it would allow the removal of photoresist residues from the semiconductor surface (column 5, lines 24-32). It would also have been obvious to one of ordinary skill in the art at the time of the invention was made use the corrosion inhibitor as taught by Honda et al. in the composition of Iwata et al., since it would prevent corrosion of surfaces (e.g. metal surfaces) without reduction of cleaning rate of the composition (column 5, lines 46-58).

The combined teachings of Iwata et al. and Honda et al. fail to specifically teach the composition additionally comprises from about 0.5 to about 5 percent by weight of the corrosion inhibitor. However, since the range recited by the references overlap the range of the claimed invention, it would have been obvious to one of ordinary skill in the art at the time the invention was made since a prima facie case of obviousness exists.

See MPEP 2144.05.

In reference to claim 43, the combined teachings of Iwata et al. and Honda et al. teach wherein the composition additionally comprises from about 2 percent to about 12 percent by weight of hydroxylamine (Iwata et al., column 4, lines 4 – 9).

Response to Arguments

8. Applicant's arguments filed 04/17/2003 have been fully considered but they are not persuasive.

Applicants argue, "... Iwata... describes a photoresist remover comprising 0.01% by weight of a quaternary ammonium hydroxide, 1 to 80% by weight of a nucleophilic amine, 0.5 to 20% by weight of a sugar...none of the formulations disclosed or claimed in the present application contain a sugar or sugar alcohol, nor they are intended to contain sugar or sugar alcohol. Furthermore, these cannot be considered organic solvents as disclosed and claimed in the present invention because one of skill in the art would clearly understand that the sugars or sugars alcohols disclosed in Iwata could not be substituted into the formulations of the present invention... Because one of skill in the art would know that the formulations of the present application do not include or contemplate the sugars or sugar alcohols of Iwata, such skilled artisans would recognize that Iwata teaches away from the claims of the present application...". In response to this argument, the claimed invention teaches a composition comprising several ingredients. Therefore, because of the comprising language, the prior art of record meet the claimed invention. If applicants' intention is to claim a composition including specific ingredients including a specific group of organic solvents, it should be specified as such.

Also, applicants argue, "...Iwata fails to address the removal of residues from substrates containing copper...Iwata does not claim, disclose or even suggest the removal of etch residues from integrated circuits using copper materials. Therefore, Iwata does not disclose presently the claimed invention...". In response to this argument, Iwata et al. do teach the use of removing agents on copper materials (Iwata et al., column 1, line 14 – column 2, line 19). Furthermore, the recitation "removal of etch residues from integrated circuits using copper materials" occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Conclusion

9. Papers related to this application may be submitted directly to Art Unit 2823 by facsimile transmission. Papers should be faxed to Art Unit 2823 via the Art Unit 2823 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2823 Fax Center number is **(703) 305-3432**. The Art Unit 2823 Fax Center is to be used only for papers related to Art Unit 2823 applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Julio J. Maldonado** at **(703) 306-0098** and between the


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hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via julio.maldonado@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at (703) 308-0956.

JMR
6/28/03


George Fourson
Primary Examiner